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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DAO, MINH D

ART UNIT	PAPER NUMBER
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2682

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/982,282	Applicant(s) RECHT, ELYAHU	
	Examiner MINH D. DAO	Art Unit 2682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 77-152 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 77-140 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 141-147 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01/14/2002</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 77-140, 148-152 in the reply filed on 01/03/2005 is acknowledged.

Claim Objections

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 79-154 have been renumbered to 77-152.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 84,86,89,91,116,17,118,120,121,122,123,124,140 are rejected under 35 U.S.C. 102(b) as being anticipated by Ranky (US 5,072,200).

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Regarding claim 84, Ranky teaches a signal to interference enhancer comprising: at least one passive analog circuit operative to decrease radio frequency interference in a received signal; and at least one active analog circuit operative to decrease radio frequency interference in said received signal, said at least one passive analog circuit and said at least one active analog circuit being arranged in series for providing radio frequency signal to interference enhancement to said received signal (see figs. 1 and 2, col. 3, lines 19-25).

Regarding claim 86, Ranky teaches a signal to interference enhancer according to claim 84, and wherein said at least one passive analog circuit comprises a passive filter which reduces the amplitude of common mode interference (see abstract of Ranky).

Regarding claims 89,91,121,122,123,124 Ranky teaches a signal to interference enhancer wherein said at least one passive analog circuit is operative to reduce non-common mode interference due to imperfect balancing of first and second transmission lines by filtering the common mode interference (see col. 1, lines 15-28; col. 3, lines 19-25).

Regarding claim 116, the claim has the same limitation as that of claim 84 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 84.

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Regarding claims 117,118 the claim has the same limitation as that of claim 109 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 109.

Regarding claim 120, the claim has the same limitation as that of claim 86 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 86.

Regarding claim 140, the claim has the same limitation as that of claim 84 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 84. In addition, the active filter of the present invention could inherently be connected to a modem to process data going to/from the circuitry of the filter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 77,80,110,112,133,135,135,148,151 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muelleheim et al. (US 4,543,554) in view of Yoshizawa et al. (US 5,611,871).

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Regarding claim 77, Muelleheim teaches a communication circuit comprising: communications circuitry having an input and an output (see fig. 3); and a noise suppressor (see fig. 1, item 20) comprising: an magnetic core (see fig. 1, item 20); and a bifilar winding around said amorphous magnetic core (see fig. 1, items 18,19). However, Muelleheim does not disclose that the magnetic core is amorphous. Yoshizawa, in an analogous art, teaches a magnetic core using ferrite and amorphous materials (see col. 1, lines 12-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the teaching of Yoshizawa to Muelleheim in order to obtain a amorphous magnetic core capable of operate in higher temperature environment as taught by Yoshizawa.

Regarding claim 80, the combination of Muelleheim and Yoshizawa teaches a noise suppressor assembly comprising at least one noise suppressor including: a core including ferrite and an amorphous magnetic material (see Yoshizawa, col. 1, lines 12-29); and a bifilar winding wound around said core (see Muelleheim, fig. 1, items 18,19).

Regarding claim 112, the claim has the same limitation as that of claim 80 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 80.

Regarding claim 110, the claim has the same limitation as that of claim 77 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 77.

Regarding claim 133, the claim has the same limitation as that of claim 77 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 77.

In addition, and Regarding claim 133, the claim has the same limitation as that of claim 77 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 77. In addition, it is obvious to one skilled in the art to use their own logic to design a circuitry as claimed such that the amorphous magnetic core has a closed E-shape.

Regarding claim 148, the claim has the same limitation as that of claims 77-79 and therefore is interpreted and rejected for the same reason set forth in the rejections of claims 77-79.

Regarding claim 151, the claim has the same limitation as that of claim 148 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 148.

2. Claims 78,82,111,114,115,136,137,138,139 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muelleheim et al. (US 4,543,554) in view of Yoshizawa et al. (US 5,611,871) and further in view of Euge (US 3,596,167).

Regarding claims 78,82,83, Muelleheim and Yoshizawa does not disclose a multiplicity of noise suppressors. Euge, in an analogous art, teaches a series of transformers

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cascading in a circuitry (see fig.1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the teaching of Euge to Yoshizawa and Muelleheim so that the circuitry would efficiently handle high voltages.

Regarding claim 111, the claim has the same limitation as that of claim 78 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 78.

Regarding claim 115, the claim has the same limitation as that of claim 83 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 83.

Regarding claim 114, the claim has the same limitation as that of claim 111 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 111.

Regarding claims 136,137,138,139 it is obvious to one skilled in the art to use their own logic to design a circuitry as claimed such that the amorphous magnetic core has a closed E-shape or a toroidal shape.

3. Claims 79,81,113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muelleheim et al. (US 4,543,554) in view of Yoshizawa et al. (US 5,611,871), Euge (US 3,596,167) and further in view of Harnden (US 3,710,187).

Regarding claims 79,81 the combination of Muelleheim, Yoshizawa, and Harnden does not disclose that the noise suppressors having cores containing different amorphous magnetic materials. Harnden, in an analogous art, teaches a magnetic core with different materials (see figs. 3A, 3B). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the teaching of Harnden to Euge, Yoshizawa and Muelleheim to obtain a magnetic core using metal oxide varistor that can prevent sparking of the suppressor during sudden voltage surges as taught by Harnden.

Regarding claim 113, the claim has the same limitation as that of claim 79 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 79.

3. Claims 85,87,90,92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ranky (US 5,072,200) in view of Yeap (US 2001/0050987).

Regarding claim 85, Ranky teaches the limitations of claim 84 but fails to teach that a signal to interference enhancer according to claim 84, and wherein said at least one active analog circuit comprises a subtraction circuit which cancels common mode interference. Yeap, in an analogous art, teaches a subtractor that removes noise in a circuitry (see fig. 1, item 48; section [0029]).

Regarding claims 87,88,92 the combination of Ranky and Yeap teaches a signal to interference enhancer, and wherein said at least one passive analog circuit operates in a frequency range which is at least partially non-overlapping with a frequency range of operation of said at least one active analog circuit (see Ranky, col. 2, lines 17-63).

Regarding claim 90 Ranky teaches a signal to interference enhancer wherein said at least one passive analog circuit is operative to reduce non-common mode interference due to imperfect balancing of first and second transmission lines by filtering the common mode interference (see col. 1, lines 15-28; col. 3, lines 19-25).

4. Claims 93-100,101,102,103,104-106,107,108,109,125,126,127,128,129,130,131, 132,149,152 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ranky (US 5,072,200) in view of JP 06077756 A.

Regarding claim 93, Ranky, as mentioned above, teaches the limitations of claim 84 but fails to teach that wherein said at least one passive analog circuit comprises: EMI filter operative to attenuate interference at frequencies above a desired frequency pass band; and a plurality of cascaded common mode chokes connected in series with said EMI filter, said common mode chokes being operative to attenuate interference at frequencies within said desired frequency pass band. This limitation is taught by JP 06077756 A (see English translation and figs 1 and 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to

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provide the teaching of JP 06077756 A to Ranky in order to obtain a simple low cost way to prevent interference.

Regarding claim 94, Ranky does not disclose a metallic barriers located at said filter and at said cascaded common mode chokes in order to reduce parasitic input to output interference coupling. However, it is obvious that one skilled in the art would place a metallic or a RF shielding barrier between the filter and the cascaded common chokes in order to efficiently prevent interference from going through the whole filtering circuitry.

Regarding claims 95,127, the claims have the same limitation as that of claim 80 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 80.

Regarding claim 96, it is obvious to one skilled in the art that the ferrite material could comprise silicon steel permalloy in order to obtain a simple low cost and efficient way of building electromagnetic cores.

Regarding claims 97-99, 104-106,131, it is obvious to one skilled in the art to use their own logic to design a circuitry as claimed such that: the magnetic permeability is between 20,000-100,000; the magnetic permeability varies between -30 C and 85 c by less than 5%; the amorphous material has saturation current of at least 5 Amperes; the amorphous material comprises at least cobalt and nickel.

Regarding claim 100, the claim has the same limitation as that of claim 80 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 80.

Regarding claim 101, the claim has the same limitation as that of claim 93 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 93.

Regarding claim 102, the claim has the same limitation as that of claim 95 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 95.

Regarding claim 103, the claim has the same limitation as that of claim 96 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 96.

Regarding claim 107, the claim has the same limitation as that of claim 100 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 100.

Regarding claim 108, the claim has the same limitation as that of claim 94 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 94.

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Regarding claim 109, the claim has the same limitation as that of claims 101 and 108 and therefore is interpreted and rejected for the same reasons set forth in the rejections of claims 101 and 108.

Regarding claims 125,128,130, the claims have the same limitation as that of claim 101 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 101.

Regarding claims 126,129 the claim has the same limitation as that of claim 108 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 108.

Regarding claim 149, the claim has the same limitation as that of claims 101,108 and therefore is interpreted and rejected for the same reason set forth in the rejections of claims 101,108.

Regarding claim 150, the claim has the same limitation as that of claim 149 and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 149.

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Regarding claim 152, the claim has the same limitation as that of claims 93,94 and therefore is interpreted and rejected for the same reason set forth in the rejections of claims 93,94.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINH D. DAO whose telephone number is 571-272-7851. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NICK CORSARO can be reached on 571-272-7876. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Minh Dao *MPD*
Art Unit 2682
June 9, 2005

Nick Corsaro
NICK CORSARO
PRIMARY EXAMINER